MAY 2 6 2004
PATENT & TRADEMARK OFFICE



FIG. 1

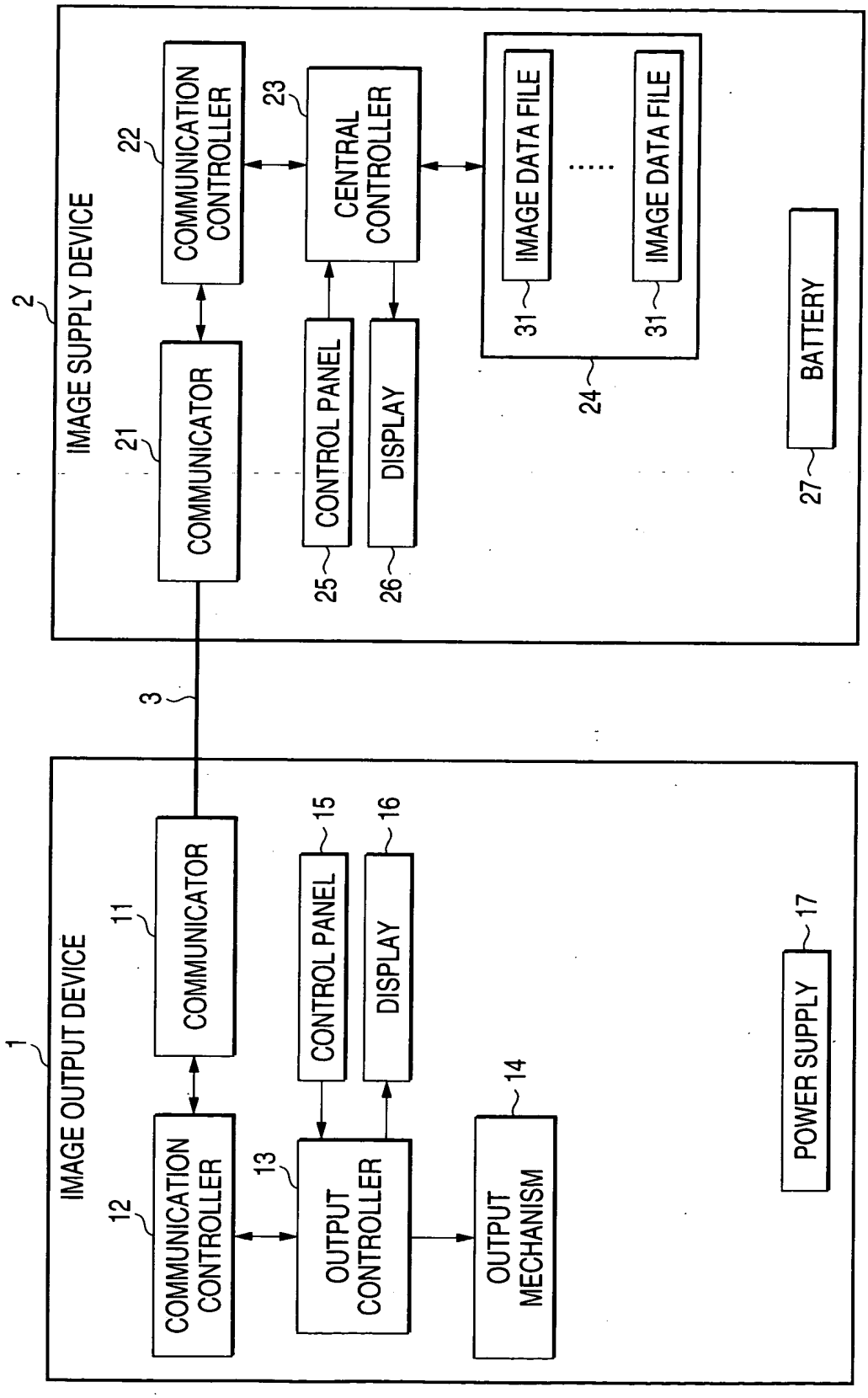


FIG. 2

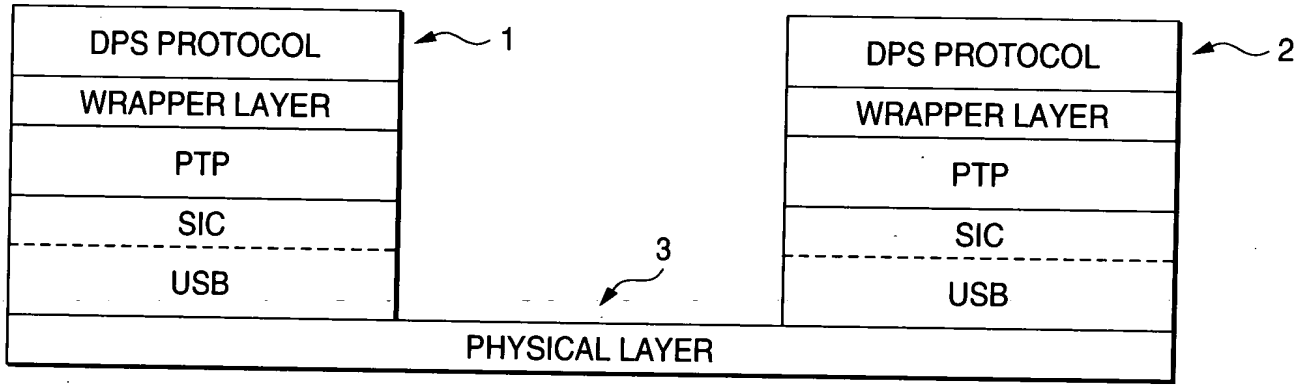

DPS PROTOCOL
WRAPPER LAYER
PTP
SIC
USB
1
3
DPS PROTOCOL
WRAPPER LAYER
PTP
SIC
USB
2
PHYSICAL LAYER

FIG. 3

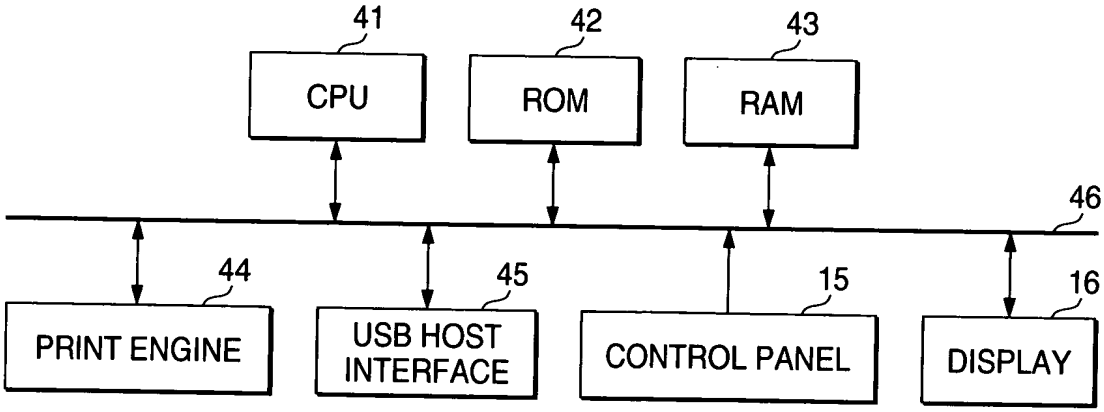

41
42
43
CPU
ROM
RAM
46
44
45
15
16
PRINT ENGINE
USB HOST INTERFACE
CONTROL PANEL
DISPLAY

FIG. 4

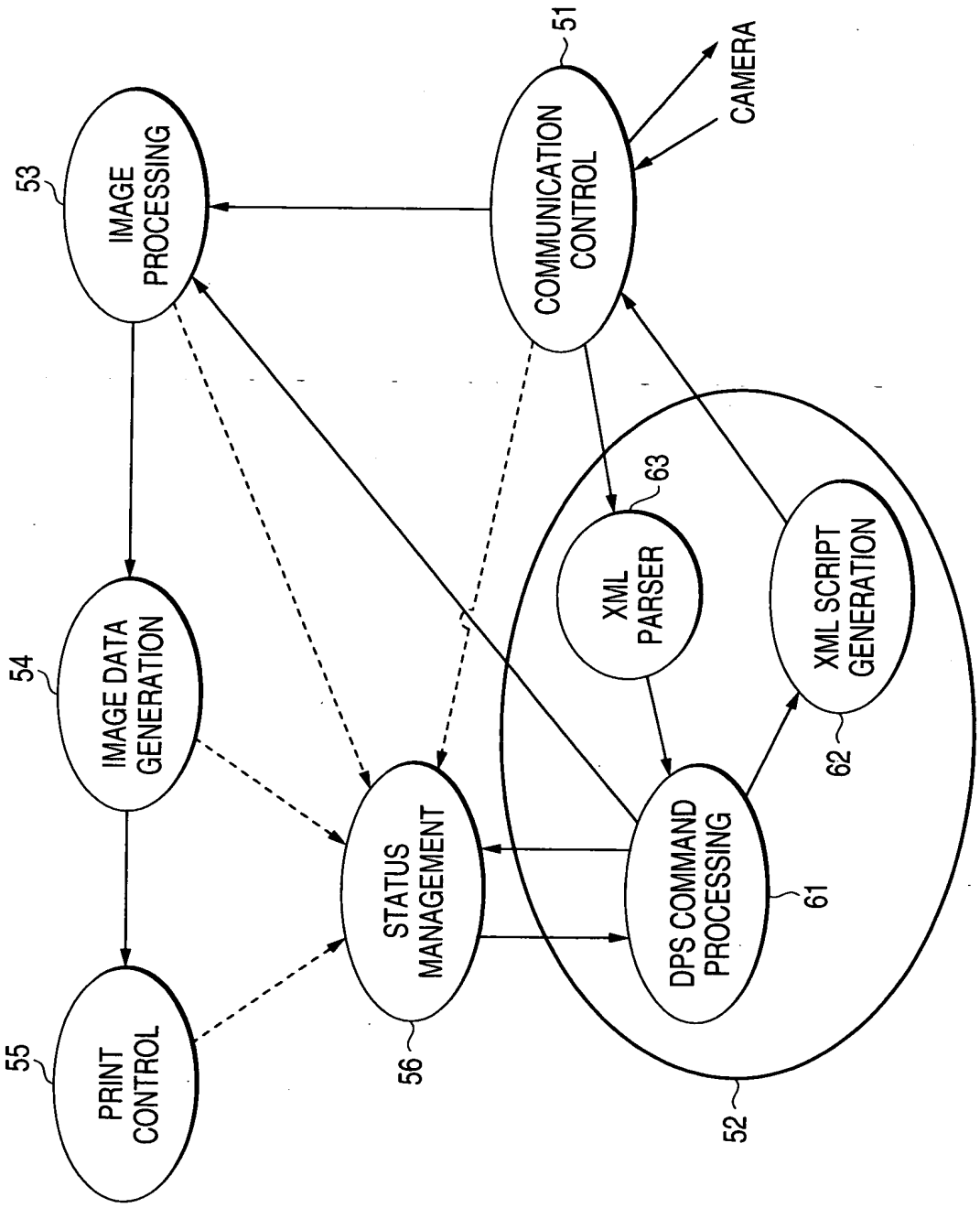


IMAGE PROCESSING
53
COMMUNICATION CONTROL
51
CAMERA
IMAGE DATA GENERATION
54
XML PARSER
63
XML SCRIPT GENERATION
62
STATUS MANAGEMENT
56
DPS COMMAND PROCESSING
61
PRINT CONTROL
55
52

FIG. 5

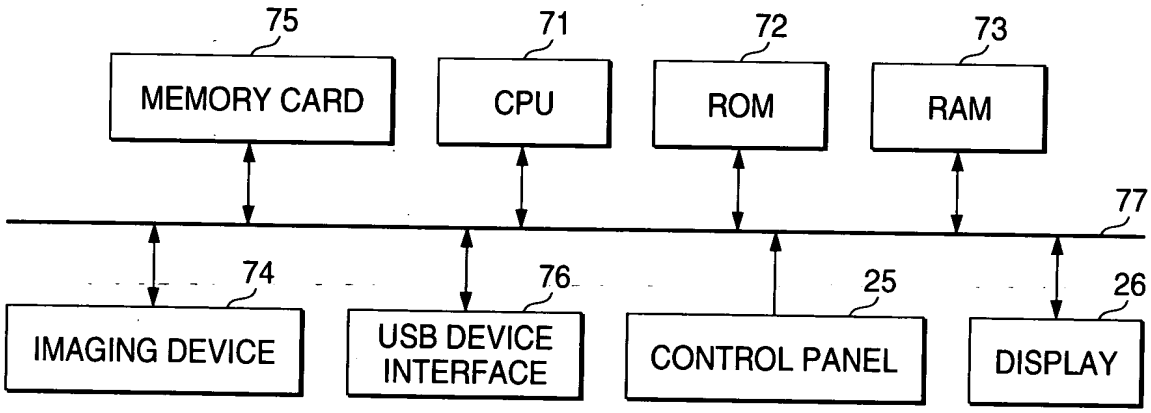

75
71
72
73
MEMORY CARD
CPU
ROM
RAM
77
74
76
25
26
IMAGING DEVICE
USB DEVICE INTERFACE
CONTROL PANEL
DISPLAY

FIG. 6

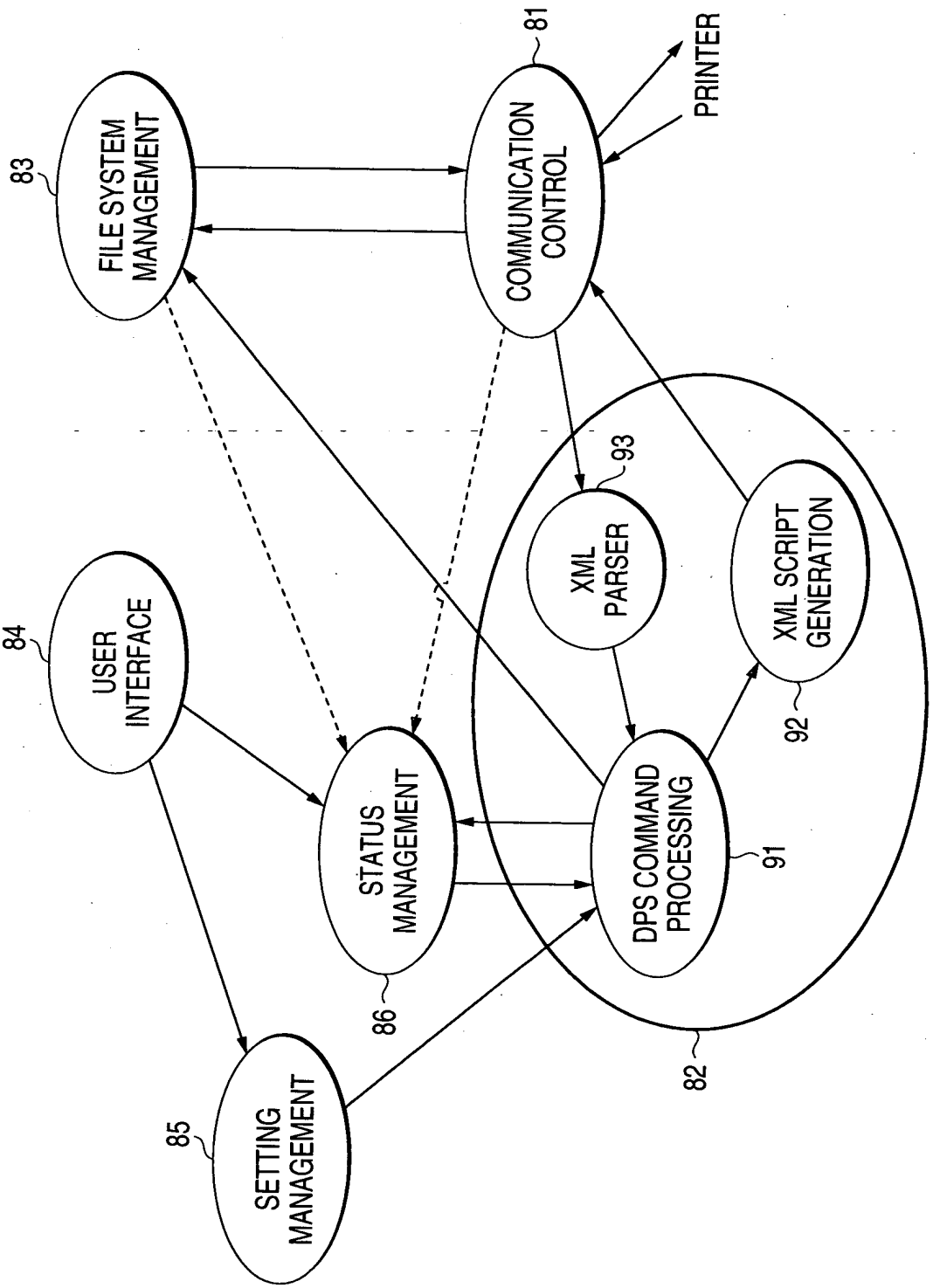

FILE SYSTEM MANAGEMENT
83
COMMUNICATION CONTROL
81
PRINTER
USER INTERFACE
84
XML PARSER
93
XML SCRIPT GENERATION
92
STATUS MANAGEMENT
86
DPS COMMAND PROCESSING
91
SETTING MANAGEMENT
85
82

FIG. 7

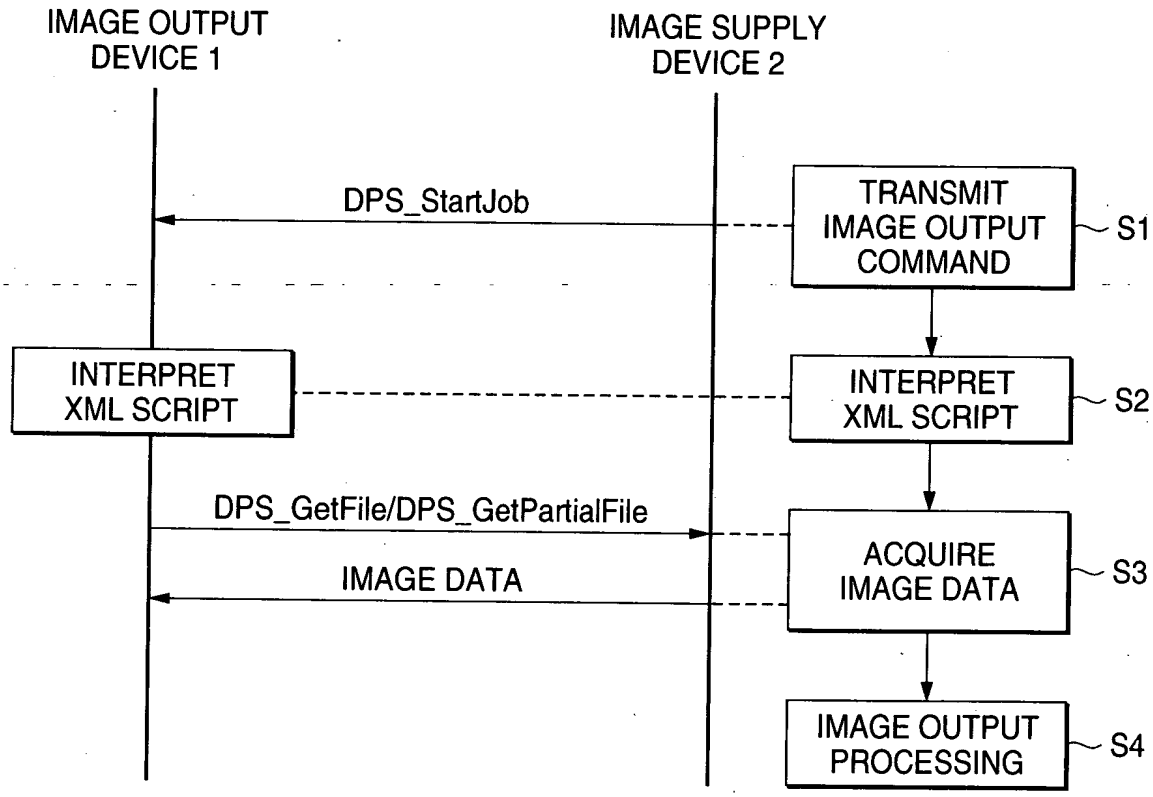


IMAGE OUTPUT DEVICE 1
IMAGE SUPPLY DEVICE 2
DPS_StartJob
TRANSMIT IMAGE OUTPUT COMMAND
S1
INTERPRET XML SCRIPT
INTERPRET XML SCRIPT
S2
DPS_GetFile/DPS_GetPartialFile
IMAGE DATA
ACQUIRE IMAGE DATA
S3
IMAGE OUTPUT PROCESSING
S4

*FIG. 8*

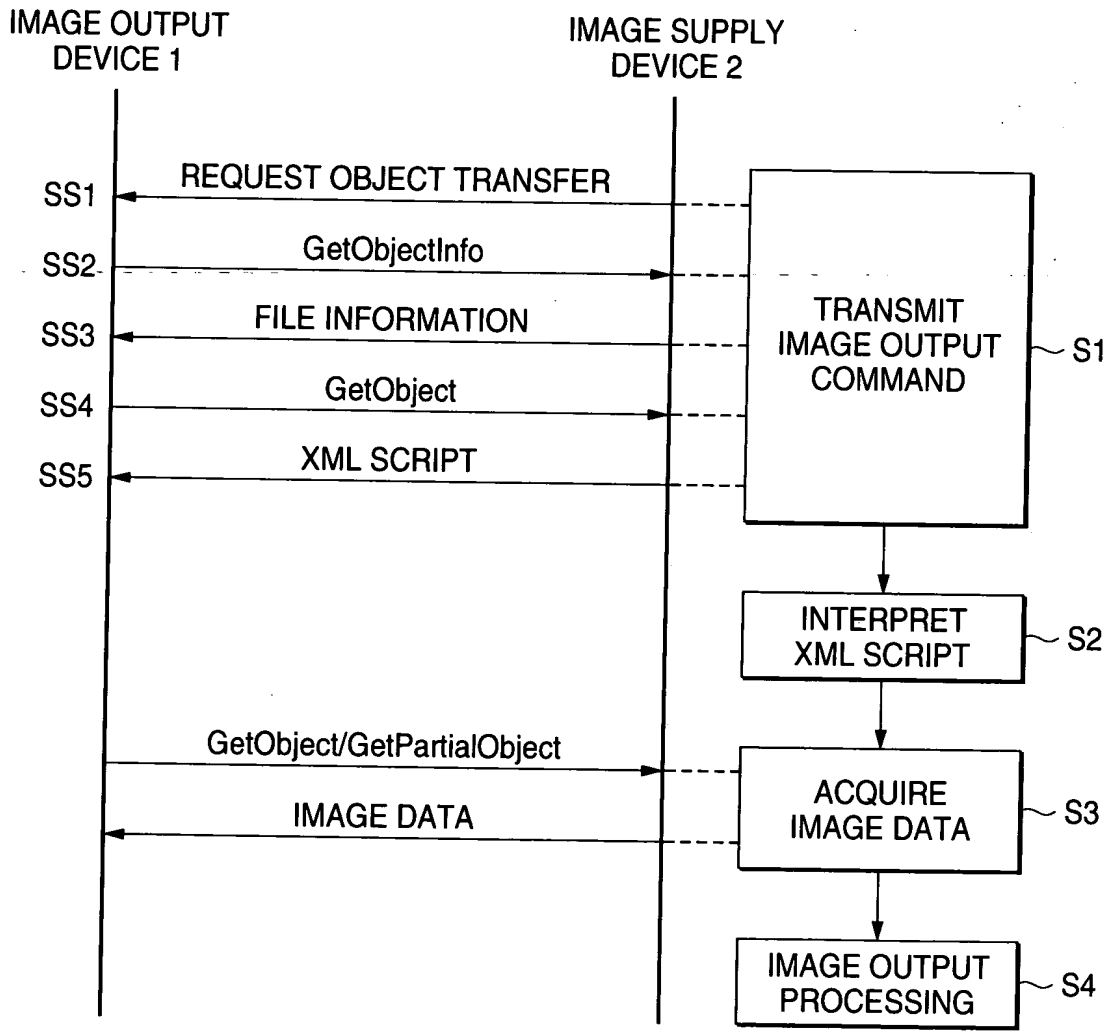


IMAGE OUTPUT DEVICE 1
IMAGE SUPPLY DEVICE 2
SS1
REQUEST OBJECT TRANSFER
SS2
GetObjectInfo
SS3
FILE INFORMATION
SS4
GetObject
SS5
XML SCRIPT
TRANSMIT IMAGE OUTPUT COMMAND
S1
INTERPRET XML SCRIPT
S2
GetObject/GetPartialObject
IMAGE DATA
ACQUIRE IMAGE DATA
S3
IMAGE OUTPUT PROCESSING
S4

FIG. 9

```
<?xml version="1.0"?>
<dps xmlns="http://www.xxxx">
  <startJobRequest>
    <job>
      <jobConfig>
        <quality>01000000</quality>
        <paperSize>02010000</paperSize>
        <paperType>03020000</paperType>
        <fileType>04150000</fileType>
        <date>05010000</date>
        <fileName>06000000</fileName>
        <imageOptimize>07000000</imageOptimize>
        <layoutItem>08010000</layoutItem>
      </jobConfig>
      <printInfo>
        <image>
          <imageID>00000001</imageID>
          <imageDate>2002/05/03</imageDate>
        </image>
      </printInfo>
    </job>
  </startJobRequest>
</dps>
```

FIG. 10

```
<?xml version="1.0"?>
<dps xmlns="http://www.xxxx">
  <GetFileRequest>
    <fileID>00000001</fileID>
    <buffPtr>00100000</buffPtr>
  </getFileRequest>
</dps>
```

FIG. 11

| PRESET NUMBER | CONTRAST | BRIGHTNESS | COLOR BALANCE | SATURATION | SHARPNESS | MEMORIZED COLOR | NOISE REMOVAL | SUITABLE SCENE |
|---|---|---|---|---|---|---|---|---|
| 1 | NORMAL | NORMAL | NORMAL | NORMAL | NORMAL | OFF | OFF | NORMAL |
| 2 | SLIGHT SOFT | SLIGHT BRIGHT | NORMAL | SLIGHT LOW | SLIGHT WEAK | FLESH | OFF | PORTRAIT |
| 3 | SLIGHT HARD | NORMAL | NORMAL | SLIGHT HIGH | SLIGHT STRONG | SKY & GREEN | OFF | LANDSCAPE |
| 4 | NORMAL | DARK | OFF | NORMAL | SLIGHT WEAK | GREEN | ON | EVENING |
| 5 | NORMAL | DARK | OFF | NORMAL | NORMAL | OFF | ON | NIGHTVIEW |
| 6 | SLIGHT SOFT | SLIGHT BRIGHT | WEAK | SLIGHT HIGH | NORMAL | RED | OFF | FLOWER |
| 7 | NORMAL | NORMAL | WEAK | NORMAL | STRONG | OFF | OFF | MACRO |
| 8 | HARD | NORMAL | NORMAL | SLIGHT HIGH | STRONG | OFF | OFF | SPORTS |
| 9 | SLIGHT SOFT | BRIGHT | NORMAL | NORMAL | NORMAL | OFF | OFF | BACKLIGHT |
| 10 | NORMAL | NORMAL | NORMAL | HIGH | SLIGHT STRONG | RED | OFF | RED LEAVES |
| 11 | NORMAL | SLIGHT BRIGHT | NORMAL | NORMAL | SLIGHT STRONG | FLESH | OFF | MEMORIAL |

FIG. 12

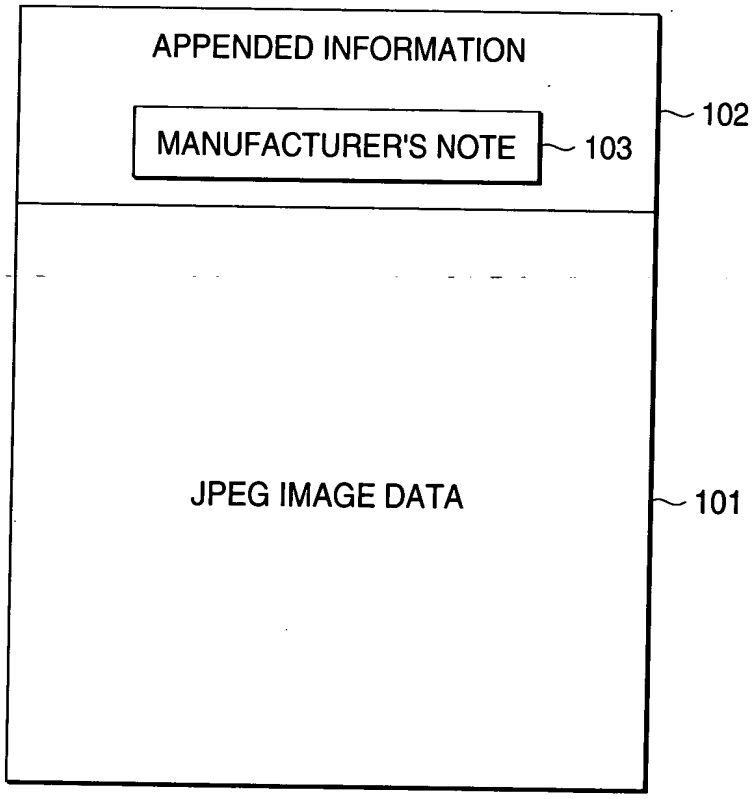

APPENDED INFORMATION
MANUFACTURER'S NOTE
103
102
JPEG IMAGE DATA
101

FIG. 13

| OFFSET | DATA |
|---|---|
| 0 | MANUFACTURER NAME |
| 6 | RESERVED |
| 8 | ENTRY NUMBER N OF LOCAL TAG |
| 10 | FIRST LOCAL TAG |
| 22 | PRINT MATCHING |
| ⋮ | ⋮ |
| 10 + 12 (N - 1) | N-TH LOCAL TAG |

FIG. 14

| OFFSET | DATA |
|---|---|
| 0 | PRINT MATCHING IDENTIFIER |
| 8 | PIM VERSION INFORMATION |
| 12 | RESERVED |
| 14 | ENTRY NUMBER N OF PARAMETER SETTING |
| 16 | FIRST PARAMETER NUMBER |
| 18 | FIRST PARAMETER SETTING VALUE |
| 22 | SECOND PARAMETER NUMBER |
| 24 | SECOND PARAMETER SETTING VALUE |
| 28 | THIRD PARAMETER NUMBER |
| 30 | THIRD PARAMETER SETTING VALUE |
| ⋮ | ⋮ |
| 16 + 6 (n - 1) | n-TH PARAMETER NUMBER |
| 18 + 6 (n - 1) | n-TH PARAMETER SETTING VALUE |

FIG. 15

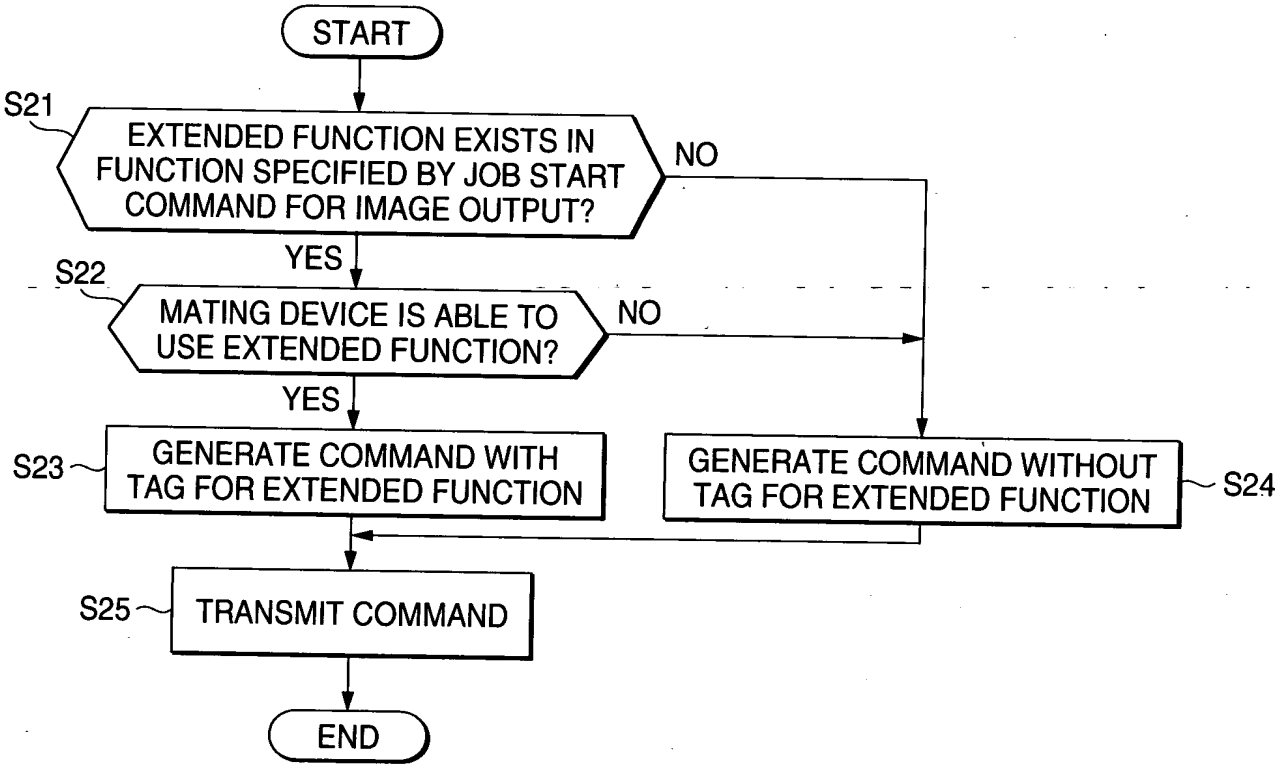

START
S21
EXTENDED FUNCTION EXISTS IN FUNCTION SPECIFIED BY JOB START COMMAND FOR IMAGE OUTPUT?
NO
YES
S22
MATING DEVICE IS ABLE TO USE EXTENDED FUNCTION?
NO
YES
S23
GENERATE COMMAND WITH TAG FOR EXTENDED FUNCTION
GENERATE COMMAND WITHOUT TAG FOR EXTENDED FUNCTION
S24
S25
TRANSMIT COMMAND
END

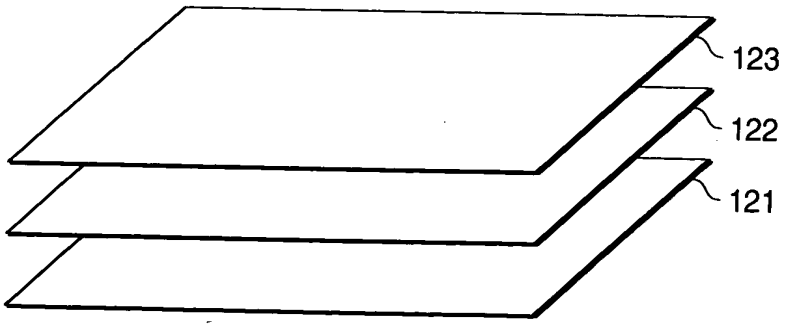
FIG. 16

```
<?xml version="1.0"?>
<dps xmlns="http://www.xxxx">
  <startJobRequest>
    <job>
      <jobConfig>
        <quality>01000000</quality>
        <paperSize>02010000</paperSize>
        <paperType>03020000</paperType>
        <fileType>04150000</fileType>
        <date>05010000</date>
        <fileName>06000000</fileName>
        <imageOptimize>
          07000000
          <imagdOptimize2>
            08000000
          </imageOptimize2>
        </imageOptimize>
        <layoutItem>08010000</layoutItem>
      </jobConfig>
      <printInfo>
        <image>
          <imageID>00000001</imageID>
          <imageDate>2002/05/30</imageDate>
        </image>
      </printInfo>
    </job>
  </startJobRequest>
</dps>
```

FIG. 17

```
<?xml version="1.0"?>
<dps xmlns="http://www.xxxx">
  <startJobRequest>
    <job>
      <jobConfig>
        <quality>01000000</quality>
        <paperSize>02010000</paperSize>
        <paperType>03020000</paperType>
        <fileType>04150000</fileType>
        <date>05010000</date>
        <fileName>06000000</fileName>
        <imageOptimize>07000000</imageOptimize>
        <layoutItem>08010000</layoutItem>
      </jobConfig>
      <printInfo>
        <image>
          <imageID>00000001</imageID>
          <imageDate>2002/05/30</imageDate>
          <imageOptimize2>
            08000000
          <imageOptimize2>
        </image>
      </printInfo>
    </job>
  </startJobRequest>
</dps>
```

FIG. 18



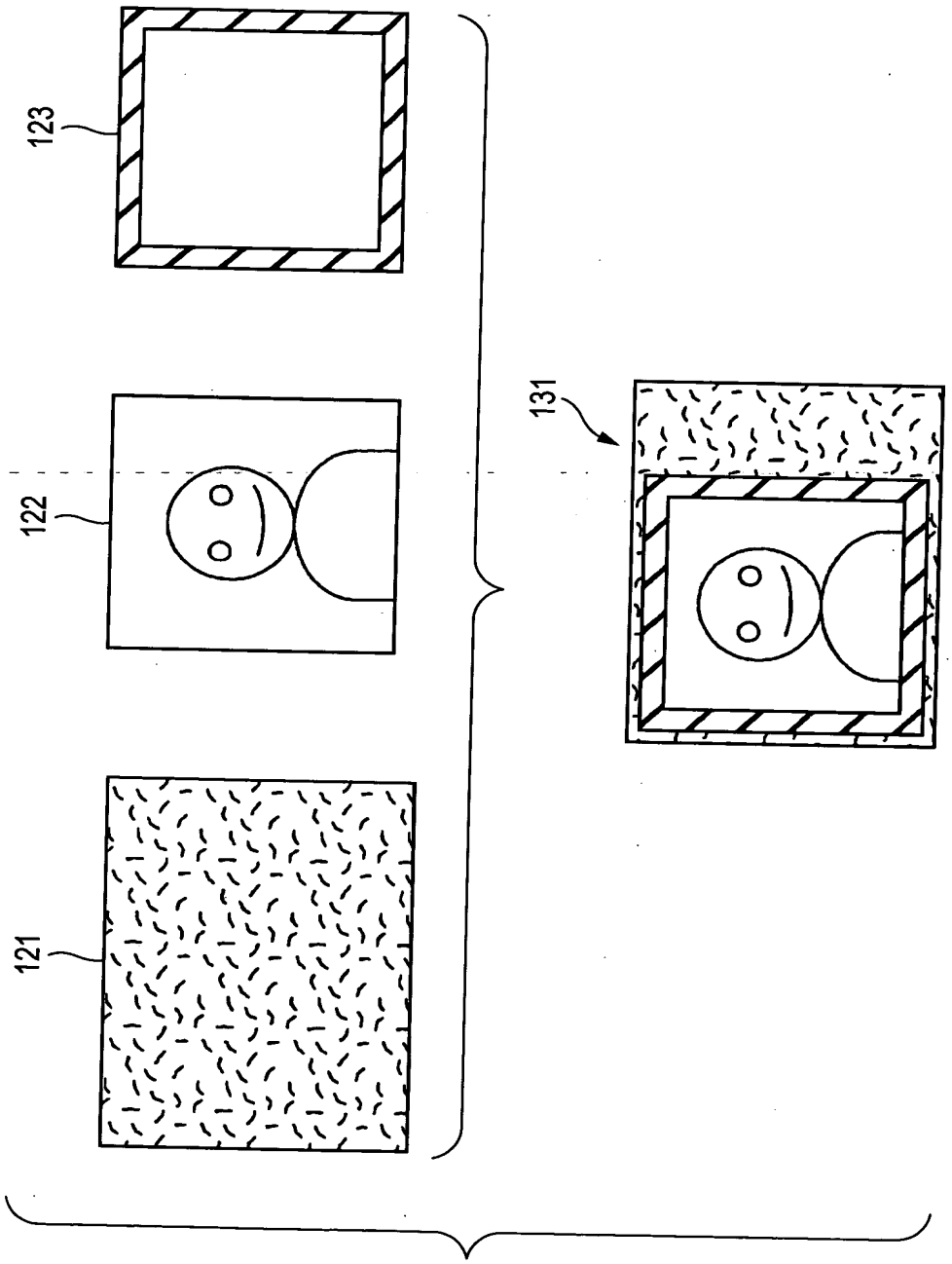



FIG. 19

FIG. 20

```
[HEADER]
HdRevision = 02.00
HdAuthor = "xxxx"
HdCopyright = "xxxx"
HdChangeFlag = Possible
HdKeyWord = "Christmas," "Greeting"
HdTitle = "SAMPLE"
HdComment = "SAMPLE"
HdDirection = Vertical
HdSound = "...EPUDL/GSOUND.PCM"
HdCapacity = 1024000
HdThumbnail = "..EPUDL/IMAGE/001UDL.USF"
HdPhysicalPaperSize = R89
HdMargins = 3,3,3,3

[PAGE]
Draw Picture ("",1,50,100,1500,1200,4,0,5)
Draw Picture ("..EPUDL/IMAGE/001.EFF",0,10,20,100,200,0,1,4)
Draw Strings ("..EPUDL/IMAGE/001.EFF",0,"%G.%d.%y",100,200,200,300,"Mincho",0,128,128,128)

Draw Line ( 10,  20,  10,200,5,255,0,0)
Draw Line (100,  20,100,200,5,255,0,0)
Draw Line ( 10,  20,100,  20,5,255,0,0)
Draw Line ( 10,200,100,200,5,255,0,0)
```

FIG. 21

```
<?xml version="1.0"?>
<dps xmlns="http://dps.org/version">
  <startJobRequest>
    <job>
      <capability name="Standard">
        <qualities>01000000</qualities>
        <paperSizes>
          <paperSizeItems>02010000</paperSizesItems>
          <paperSizeLink>00000010</paperSizeLink>
        </paperSizes>
        <paperTypes>03020000</paperTypes>
        <imageType>04000000</imageType>
        <dates>05010000</dates>
        <fileName>06000000</fileName>
        <imageOptimize>07000000</imageOptimize>
        <layout>
          <layoutItems>08010000</layoutItems>
          <layoutLink>00000011</layoutLink>
        </layout>
      </capability>
    </job>
    <printInfo>
      <image>
        <imageID>00000001</imageID>
        <imageDate>2002/05/30</imageDate>
        <imageLink>00000012</imageLink>
      </image>
    </printInfo>
  </startJobRequest>
</dps>
```